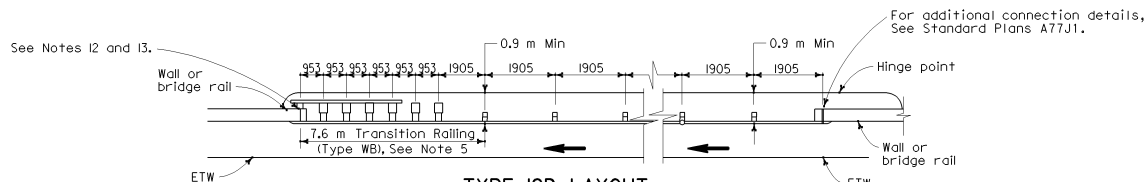


TYPE 12C LAYOUT

(GUARD RAILING INSTALLATION AT STRUCTURE APPROACH WITH A BURIED END ANCHOR TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 9 and 10



TYPE 12D LAYOUT

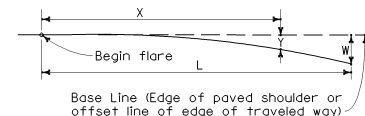
(CONTINUOUS GUARD RAILING INSTALLATION BETWEEN STRUCTURES)
See Notes 6 and 10

NOTES

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail post spacing to be 1905 mm center to center, except as otherwise noted.
- Except as noted, line posts are 150 mm x 200 mm x 1.83 m wood with 150 mm x 200 mm x 360 mm wood blocks. MW 150 x 14 steel posts, 1.83 m in length, with 150 mm x 200 mm x 360 mm notched wood blocks or plastic blocks may be used for 150 mm x 200 mm x 1.83 wood posts with 150 mm x 200 mm x 360 mm wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by \rightarrow .
- For Transition Railing (Type WB) details for Types 12C and 12D Layouts, see Standard Plan A77J4.
- Type 12D layout is typically used where continuous guard railing is recommended between structures.
- The 15:1 or flatter flare for Type 12C Layout is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing with the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 3.8 meters.
- For details of the buried post end anchor used with Type 12C Layout, see Standard Plan A77I2.
- Where placement of dike is required with guard railing installations, see Standard Plan A77C4 for dike positioning details.
- Type 12C Layout is typically used:
 - To the right of approaching traffic, at the end of the structure, on a two-lane conventional highway where the roadbed width across the structure is less than 12 meters. See Railing Case 1 in Diagram No. 1 on Standard Plan A77D1.
 - To the left of approaching traffic, at each of a structure, on a two-lane conventional highway where the roadbed width across the structure is less than 12 meters. See Railing Case 2 in Diagram No. 1 on Standard Plan A77D1.
 - To the right of approaching traffic at the end of each structure on multilane freeways or expressways with separate adjacent or parallel bridges. See Railing Case 1 in Diagram No. 3 on New Standard Plan A77D1.
 - To the right of approaching traffic at the end of the structure on multilane freeways or expressways with decked median on the bridge. See Railing Case 1 in Diagram No. 4 on Standard Plan A77D1.
- See Standard Plan A77F3 for typical layout used left of approaching traffic at the ends of each structure on multilane freeways or expressways with separate adjacent or parallel bridges. See RAILING CASE 4 in Diagram No. 3 on Standard Plan A77D1.
- For additional details of typical connections to bridge rail, see Connection Detail AA on Standard Plans A77J1 and A77J2 and Connection Detail FF on Standard Plans A77K1 and A77K2.
- For additional details of a typical connection to walls or abutments, see Standard Plan A77J3.
- For typical flare offsets for 7.6 m length parabola with maximum offset of 305 mm, see Standard Plan A77E1.

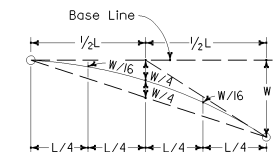


DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET TOTAL NO. SHEETS
Ellis K. Hirst REGISTERED CIVIL ENGINEER July 1, 2004 PLANS APPROVAL DATE The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet. To get to the Caltrans web site, go to: http://www.dot.ca.gov				



Base Line (Edge of paved shoulder or offset line of edge of traveled way)
 $Y = \frac{WX^2}{L^2}$
 Y = Offset from base line
 W = Maximum offset
 X = Distance along base line
 L = Length of flare

PARABOLIC FLARE OFFSETS



TYPICAL PARABOLIC LAYOUT

METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR STRUCTURE APPROACH AND BETWEEN STRUCTURES

NO SCALE
ALL DIMENSIONS ARE IN
MILLIMETERS UNLESS OTHERWISE SHOWN

A77F2